

UNITED STATES DISTRICT COURT FOR THE  
DISTRICT OF NEW HAMPSHIRE

Peter Dugas

v.

Civil No. 03-cv-376-JD  
Opinion No. 2006 DNH 095

Warden, New Hampshire State Prison

O R D E R

Peter Dugas seeks a writ of habeas corpus pursuant to 28 U.S.C. § 2254 for relief from his conviction and sentence on an arson charge. This court previously concluded that Dugas's trial counsel was constitutionally deficient, based on his failure to consult an expert on arson, but that the deficient representation did not prejudice Dugas's defense. On appeal, the majority of the panel hearing the case agreed that counsel's representation was deficient but concluded that additional proceedings were necessary to determine whether that deficiency resulted in prejudice.<sup>1</sup> Dugas v. Coplan, 428 F.3d 317, 319 (1st Cir. 2005). Dugas has filed a motion for a writ of habeas corpus to address the issue of prejudice, and the warden has filed his response. Dugas has filed a reply. A hearing was held on June 1, 2006.

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<sup>1</sup>Judge Howard wrote in dissent that the state court's application of the Strickland standard as to deficient representation was not objectively unreasonable and also disagreed with the majority that any issue remained as to prejudice.

Background<sup>2</sup>

Dugas was convicted on a charge of arson after his family's grocery store, the Dugas Superette, in Nashua, New Hampshire, was heavily damaged by fire on October 23, 1999. Dugas was the manager and a part owner of the store, while his father, Edgar Dugas, was the principal owner. Peter Dugas told police that on the night of the fire, he locked the store and left with another employee at 10:00 p.m. He said that he heard about the fire when his wife called him at around 11:30 p.m. while he was picking up his daughter.

The state's investigators concluded that the fire was started by igniting an accelerant on a pile of papers in the southeast corner of the basement. The police interpreted enhanced videotape pictures from the store's security monitor to show that Dugas left, as he said, on the night of the fire but then reentered the store just a few minutes later. In interviews with the police immediately following the fire and later, Dugas denied that he reentered the store that night. At trial, however, he recalled that he had gone back in to check on a cash drawer. He denied that he caused the fire.

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<sup>2</sup>The background information is taken from Dugas, 428 F.3d at 320-21, and State v. Dugas, 147 N.H. 62, 64-65 (2001), which provide additional factual detail about the fire, the investigation, and the trial.

The jury returned a guilty verdict, and Dugas's conviction was upheld on appeal. Dugas moved for a new trial on a claim of ineffective assistance of counsel, with support from Michael K. Higgins, an expert in arson investigation. The state court held a hearing at which Dugas's trial counsel testified that he was overly confident in the defense case and was shocked by the guilty verdict, that his cross examination of the state's witnesses would have been more effective if he had consulted an arson expert, and that he concentrated too much on the alternative defense theory that someone else started the fire. Counsel also testified that there was no way to get an expert into the fire scene without notifying the state. The state court held that counsel considered the benefits and perils of hiring an arson expert and made an appropriate strategic decision not to do so. The court denied Dugas's motion for a new trial, concluding that counsel's performance was not constitutionally deficient. The New Hampshire Supreme Court declined Dugas's appeal on October 28, 2002.

Dugas filed a petition for a writ of habeas corpus in federal court, asserting among other claims, that his trial counsel's representation was constitutionally ineffective because counsel failed to consult with an arson expert. In support of that claim, Dugas submitted a letter written by Higgins in October of 2000 to Dugas's former counsel, in which Higgins

criticized the methods used by the state investigators and offered alternative theories about the fire.

Higgins has a technical certificate in industrial electronics and has worked and lectured in the area of fire investigation for more than thirty years. He is a long-time member of the American Society for Testing Materials (ASTM) and participated in developing the ASTM E standards for fire debris analysis. He is also a member of other professional organizations and associations. He is a founder and the president of K Chemical Labs. He has been qualified as an expert to testify in other courts in cases involving arson.

This court granted summary judgment in favor of the warden, concluding that although Dugas's counsel's representation was deficient, due to his failure to consult an arson expert, that deficiency did not prejudice Dugas's defense. On appeal, the majority of the First Circuit panel agreed that Dugas's trial counsel's representation was deficient but concluded that a material factual dispute precluded summary judgment on the issue of whether that deficiency prejudiced Dugas's defense. The case was remanded for "limited further proceedings" to find "the answer to a specific question--is there a reasonable probability that Higgins's analysis of the chemical evidence and the evidence of smoke and shadows and ventilation in cross-examining the fire investigators could have affected the outcome of the trial?" Dugas, 428 F.3d at 342-43.

On remand, as directed by the court of appeals and requested jointly by the parties, this court ordered the New Hampshire State Police Forensic Laboratory, the Nashua Fire Marshal's Office, the Nashua Police Department, and Winnipesaukee Associates of Gilford, New Hampshire, to "turn over those items collected by the State as evidence in this matter and identified by Michael Higgins to petitioner's counsel, Daniel Laufer, promptly, for testing by Mr. Higgins." Doc. no. 28; see also Dugas, 428 F.3d at 342. Higgins received the evidence he requested, except that the charcoal strips and vials prepared by Morris Boudreau during his testing and analysis of the fire debris samples were not found.<sup>3</sup> Higgins was allowed to test and analyze the evidence.

Dugas then filed a motion for a writ of habeas corpus supported by Higgins's affidavit. The warden filed a response, with affidavits from Richard Wood, a certified fire and explosion investigator, and Linda Bouchard, a Criminalist II with the New Hampshire State Police Forensic Laboratory. Dugas filed a reply with a second affidavit from Higgins. The court held a hearing on June 1, 2006, during which Higgins, Wood, and Bouchard testified in response to questions from the court and from counsel.

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<sup>3</sup>Morris Boudreau was at that time a criminalist in the New Hampshire State Police Forensic Laboratory who specialized in the analysis of arson debris, along with other analysis specialities. He held a bachelor of science degree in chemistry, had additional laboratory training, and had training at the United States Department of Alcohol, Tobacco, and Firearms. He had testified as an expert witness hundreds of times.

The transcripts from the trial will be cited as "Trial Tr." with the appropriate volume and page indicated. Higgins's letter, dated October 20, 2000, which was submitted with Dugas's objection to the warden's motion for summary judgment will be cited as Letter with the appropriate page. Higgins's first affidavit, "Higgins 1st Aff.," was filed on January 30, 2006. Higgins's second affidavit, "Higgins 2d Aff.," was filed on April 18, 2006. Wood's affidavit, "Wood Aff.," and Boudreau's affidavit, "Boudreau Aff.," were filed on April 10, 2006. The hearing transcript will be cited as "Hearing Tr." with the appropriate page indicated.

#### Discussion

A claim of ineffective assistance of counsel consists of two parts, constitutionally deficient performance by counsel and resulting prejudice. United States v. Martins, 413 F.3d 139, 155 (1st Cir. 2005). Because the New Hampshire Supreme Court concluded that Dugas's counsel did not provide deficient representation, that court did not reach the prejudice prong of Dugas's ineffective assistance of counsel claim. Dugas, 428 F.3d at 327. Therefore, the issue of prejudice is reviewed, again, under the de novo standard. Id. "Prejudice occurs when 'there is a reasonable probability that, but for counsel's unprofessional errors, the result of the proceeding would have been different. A reasonable probability is a probability

sufficient to undermine confidence in the outcome.'" Id. at 334 (quoting Strickland v. Washington, 466 U.S. 668, 694 (1984)).

Because the state court did not reach the issue of prejudice, no factual findings material to that issue were made in the state court decision. See Respondent's App. Ex. C. The resulting lack of factual development in state court on the issue of prejudice was due to that court's ruling and was not because of any lack of diligence by Dugas. Therefore, an evidentiary hearing on that issue was permissible here, without requiring Dugas to satisfy the stringent requirements of § 2254(e)(2). Williams v. Taylor, 529 U.S. 420, 431-33 (2000). Further, in cases such as this one where both sides have presented new evidence through affidavits, an evidentiary hearing is necessary to allow the court to assess the credibility of the witnesses. See, e.g., Owens v. Frank, 394 F.3d 490, 498 (7th Cir. 2005); Valverde v. Stinson, 224 F.3d 129, 135 (2d Cir. 2000); see also 1 Randy Hertz & James S. Liebman, Federal Habeas Corpus Practice & Procedure § 20.1b (5th ed. 2005).

#### I. New Evidence

Higgins inspected and photographed the fire scene at the grocery store in August of 2000. He removed and tested fire debris, reviewed transcripts from Dugas's criminal trial, and talked with Morris Boudreau, the state forensic analyst who did the state's laboratory analysis of eleven samples taken from the

fire scene. In December of 2005 and January of 2006, Higgins examined the store's electrical system in the storage area where it has been kept since it was removed after the fire; the eleven samples taken from the fire that had been analyzed by Boudreau, and evidence held by the Nashua Police Department. As noted above, the charcoal strips and carbon disulfide vials that Boudreau prepared as part of his analysis of the fire debris were lost, so Higgins did not examine that evidence. In summary, Higgins disagrees with the state's theory of the origin and development of the fire, challenges the collection and analysis of the samples from the fire scene, and contends that the jury was misled because at the time of the view the condition inside the store was different than it was on the night of the fire.

In addition to the evidence and testimony presented at Dugas's trial, the warden offers the opinions of Linda Bouchard, an analyst at the New Hampshire State Police Forensic Laboratory, and Richard Wood, an expert in the field of arson cause and origin. Bouchard has a bachelor of science degree with a major in nursing and is a member of the Northeast Association of Forensic Scientists. She is a Criminalist II with the State Laboratory where she has worked since June of 1995. From June of 1994 to June of 1995, Bouchard was a laboratory scientist with the New Hampshire Public Health Laboratory, and from May of 1989 to June of 1994 she was a clinical laboratory scientist at Concord Hospital. Her current duties with the State Laboratory



include analysis and examination of ignitable liquids, ink, and explosives on physical evidence. She is the supervisor of the arson unit at the State Laboratory. She has been qualified as an expert witness in more than sixty trials.

Richard Wood has a bachelor of science degree in fire service education and administration and is a certified fire investigator in New Hampshire and New York. He has worked in firefighting since 1995 and has worked in fire investigation for the City of Nashua Fire Rescue Department since 2000. Wood also teaches courses at the Fire Academy and New Hampshire Community Technical College in fire investigation and related topics.

## II. Origin and Development of the Fire

Just before midnight on October 23, 1999, Nashua firefighters responded to a three-alarm fire at the Dugas Superette and forced entry through locked doors. They found heavy smoke throughout the building. When they opened a closed but unlocked door into the basement, they encountered thicker smoke and extreme heat, indicating that the source of the fire was in the basement. They determined that the fire was confined to the southeast corner of the basement, extinguished the fire, and ventilated the basement.

The next morning Nashua fire investigators Brian Donaldson and Richard Strand examined the building. They determined that the fire started in the basement on a pile of papers in the

southeast corner. They also concluded that the fire had begun quickly with a lot of smoke and heat but that it lacked oxygen and soon was reduced to a smolder. They found no signs of forced entry into the store and no likely cause of the fire from electrical or mechanical systems or accidental sources. Police detectives who searched the store found an electrically powered clock that stopped at 10:44.

The Nashua Fire Department investigators contacted the New Hampshire Fire Marshal's Office and a canine handler with a dog specially trained to detect petroleum distillates, which can be used as fire accelerants. The dog was taken into the basement of the store and "alerted," focusing on parts of the pile of papers where the investigators suspected the fire had started and also on some parts of the pile that had been moved away from that location. Donaldson and Strand collected samples from the papers where the dog had alerted. Zurich Insurance, the company that insured the Dugas Superette, hired a separate fire investigator, James Eddy, who collected samples from the debris in the basement, after the fire department investigators had completed their collection. The samples collected by Donaldson, Strand, and Eddy were delivered to Morris Boudreau, at the New Hampshire Police Forensic Laboratory, for analysis. Boudreau determined that two of the eleven samples collected contained medium petroleum distillates and normal alkanes, which are ignitable liquids. Those samples were part of the debris collected by

Donaldson and Strand with the help of the dog.

Eddy concluded that the fire started in the same area of the basement as had been determined by the Nashua Fire Department investigators and that it was intentionally set. Eddy contacted an electrical engineer who specialized in fire investigations, Nathaniel Johnson, to investigate the electrical system.<sup>4</sup> Johnson concluded that the fire was definitely not an electrical fire. The Nashua fire investigators, Donaldson and Strand, the insurance investigator, Eddy, and the electrical engineer, Johnson, testified as expert witnesses for the state at Dugas's criminal trial.

The state's theory at trial was that Dugas started the fire when he reentered the store after initially locking up at 10 p.m., as was shown on the security videotape. The state contended that he used an accelerant to start the fire, on a pile of papers in the corner of the basement and that the fire started quickly, generating much heat and smoke. According to the state, the heat of the fire shorted the electrical system, causing the clock to stop at 10:44. The state contended that the clock showed the fire was started before 10:44 p.m. and generated

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<sup>4</sup>Johnson testified at trial that he was then the Fire Prevention Officer for Laconia, New Hampshire, and had been involved in firefighting since 1978. Johnson stated that he was an electrical engineer and a licensed electrician and that he did independent consulting in electrical engineering doing electrical design work, forensic investigation, and fire investigation. He taught electrical fire safety at the New Hampshire Vocational Technical School.

enough heat to cause the electrical system to fail by that time. When the firefighters entered the store just before midnight, the fire had died down due to a lack of oxygen. The state theorized that if the fire had had a source of oxygen, it would have consumed the store before the firefighters arrived.

In this proceeding, Dugas challenges the state's theories about the origin and progress of the fire based upon Higgins's opinions, who criticizes the state's experts' methods and the state's arson theory. Higgins contends that the evidence indicates that the fire started much later than 10:30 p.m. and had a sufficient source of oxygen so that it was growing rather than dying out when the firefighters arrived. Higgins further charges that the state investigators improperly failed to acknowledge that no cause is found for twenty percent of fires and that Johnson failed to properly rule out an electrical cause of the fire.

There is no dispute that the fire started in the southeast corner of the basement and that it was fueled by papers that were stored there. The state's theory in the criminal trial and the warden's theory here is that Peter Dugas started the fire just after ten p.m., using an accelerant, such as charcoal lighter fluid, on the papers in the corner and that the fire burned very rapidly and then died down when it exhausted the oxygen supply in the basement. Dugas's theory for purposes of his habeas petition is that the fire started much later than the warden contends,

long after he left the store. To explain the damage already caused by the fire when the firefighters arrived, Dugas contends that the fire was burning at full force and growing when the firefighters arrived. He also suggests that the fire might have been caused by a malfunction in the electrical wires above the papers or that it may have had an undetermined cause.

A. Timing of the Fire

In support of his theory that the fire started later than the state experts described and was growing rather than dying out, Higgins contends that the basement door was partially open during the fire and that a fan vent in the basement provided an oxygen source for the fire. He provides explanations for the firefighters' contrary testimony. He also contends that because the clock was not properly tested, it provides no evidence as to the time of the fire.

1. Ventilation

Dugas argues, based on Higgins's opinions, that the fire was well-ventilated because air was coming in through the basement fan vent and smoke and heat were exhausting into the first floor through the partially open basement door, which was acting as a chimney. Higgins states that the fire investigators were negligent in failing to find the basement fan vent that could have provided a source of oxygen for the fire. He also contends

that the physical evidence shows that the firefighters were mistaken that the door to basement was closed.

a. Fan Vent

The fire investigators were aware of the fan vent in the ceiling of the basement. They did not, however, ascribe the ventilation function that Higgins theorizes. Wood gives his opinion that once the fire created intense smoke and heat, as found by the firefighters, the pressure of rising smoke and heat would have prevented cooler air from coming down through the fan vent to the fire. Instead, the fan vent would more likely have exhausted heat and smoke rather than providing an air intake, given its location near the basement ceiling and the movement of heated gases and smoke from the fire.<sup>5</sup> Because the white paint on the outside of the vent and in the area of the vent outside the store is not smoke-stained, Higgins contends smoke did not exhaust through the vent. Wood counters that the passage of time from the date of the fire until the pictures were taken in August of 2000 might have altered the condition of the vent grate and the area around it.

After doing calculations as to what size fire the fan vent could ventilate, Wood concluded that the fire damage in the

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<sup>5</sup>Wood initially suggested that the fan vent would have had louvers, preventing air from drafting in from the outside, but Higgins testified at the hearing that he looked up through the fan and saw no louvers.

basement indicated a hotter fire than the fan vent could have sustained with the basement door closed, which lead to the oxygen-starved fire that the firefighters found when they arrived.<sup>6</sup> Higgins responds that the vent would be more than sufficient to ventilate the fire with the basement door open. Therefore, whether or not Higgins's ventilation theory is persuasive requires consideration of his theory about the open basement door.

b. Door.

The door from the first floor of the Dugas Superette to the basement stairs consisted of two halves, split vertically. Lt. Keith Anderson of the Nashua Fire Department testified at Dugas's criminal trial that he and his crew of three were the first to respond to the fire. When they could not find the source of the fire on the first floor of the store and were told there was a basement, they looked for an entrance to the basement and found a closed door. Anderson testified that the door was closed but unlocked, and that another firefighter with him, George Gagnon, opened the door. Anderson also testified that a piece of plastic had melted over the top of the door and when they pulled on the

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<sup>6</sup>Dugas's counsel objected to Wood's calculations and stated that he would have subpoenaed Morris Boudreau for the hearing if he had known that such evidence would be introduced. When the court gave counsel an opportunity to subpoena Boudreau and to reconvene the hearing so that he could testify, however, counsel declined the offer.

door, the plastic came down onto it. He testified that when they "opened the door, smoke conditions worsened, and heat conditions got extremely worse." Trial Tr. Day 1, at 32. In the basement, Anderson found "heavier smoke than there was on the first floor, extremely thick, a lot of heat, and no ventilation." Id. at 33. The firefighters testified that the fire was oxygen starved and dying out when they arrived.

Higgins contends that the firefighters were mistaken. He asserts that the smoke staining, melted plastic, and burn shadows show that the left side of the basement door was closed and the right side was open at a forty-five degree angle. Specifically, Higgins notes that the doorjamb on the left side is clean and explains that the closed door protected the jamb from exposure to smoke and heat. In contrast, the doorjamb on the right side is stained, indicating that it was open and the jamb was unprotected. He also interprets the melted plastic attached to the inside (basement side) of the right door to show that it was open during the fire, allowing the plastic to melt down onto it, while the other half was closed.

Higgins theorized that the firefighters did not realize the door had two halves and that while one side was closed, the other side was open when they arrived. He challenged Anderson's testimony about the door, the melted plastic, and the amount of heat, stating that the kind of plastic on the door melts at 350 degrees and if the plastic had melted, as Anderson described, and



if the heat increased when he opened the door, as he testified, the firefighters could not have survived being in the building due to the heat. Higgins further theorized that if the door had been completely closed, the smoke and hot air would have been forced out of the basement fan vent and because that area was not smoke-stained or heat-damaged when he photographed it in August of 2000, that did not happen. He stated that the smoke coming out of the first floor roof ventilator and from under the eaves of the building, which alerted passersby that there was a fire, would not have occurred unless the door was open.

Higgins also disputed the firefighters' report that the fire was dying out when they arrived and the fire investigators' conclusion that the fire started quickly, burned rapidly, and then was dying out due to a lack of oxygen when the firefighters arrived. Higgins contended that the firefighters did not realize the fire was burning and growing because it was pitch black in the basement, because burning paper causes an unusual amount of smoke, and because without infrared heat detectors, the firefighters would not have been able to determine the stage of the fire. Higgins conceded, however, that if the basement door was closed rather than partially open, the fire would not have had the ventilation that he theorized, and would not have been burning at full force when the firefighters arrived.

Wood testified that the evidence showed both halves of the basement door were closed when the firefighters arrived, as

Anderson testified, and that the fire was dying out due to oxygen deprivation. Wood stated that the difference in the condition of the doorjamb on the two sides of the door was because one side stayed closed and the other side was propped open by the firefighters, allowing smoke, heat, and soot to stain the jamb on that side. He noted that Higgins's photographs of the basement door show a spring mechanism that would have kept the door closed unless it was propped open. Wood also compared the condition of the damage on the outside of the door to the damage in the stairwell and concluded that the heat damage was more extensive in the stairwell due to the heat being trapped there by the closed door.<sup>7</sup>

Wood gave his opinion that the basement door was closed until the firefighters opened it based on Anderson's testimony that the door was closed and that when it was opened, there was an increase in heat and smoke. Wood also explained that heat and hot gases from the fire below would have seeped through the closed door, causing the plastic banner above to melt. He noted that in Higgins's photograph the melted banner extended beyond the open half of the door, showing that it had originally melted onto both halves when they were closed. Wood stated that if the door had been open, as Higgins theorizes, "the line of

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<sup>7</sup>Higgins noted that a paper notice mounted on the wall at the top of the stairs did not burn, indicating that the temperature had not reached the level needed for paper to auto-ignite.

demarcation" (the level of intense smoke and super heated gases) at five feet off the floor in the basement would not have occurred because the smoke and heat would not have been contained in the basement. Also, Wood stated that if the door had been open, the heat from the basement would have affected plastic materials on the first floor, which did not happen. He testified that smoke and heat would rise to the first floor through a variety of openings, including passageways through the floor for plumbing and wiring, causing the smokey conditions found by the firefighters and the smoke escaping from the building that was seen by the passersby.

The facts do not support Higgins's open-door theory. There is no basis in the record from which to conclude that Anderson was mistaken about the condition of the basement door when he arrived. His testimony was very clear that the door was closed and that the conditions changed dramatically when the door was opened. Higgins's theory about the smoke staining on the right side of the door does not rule out the door being closed before the firefighters arrived because smoke and heat could have stained that area after the firefighters opened it, particularly in light of Lt. Anderson's testimony about the amount of smoke and heat that they found when they opened the door. The plastic banner that melted onto the door also does not show that the door was open and instead tends to show that it was closed. Having carefully considered the pertinent evidence presented at trial

and having listened to the testimony of Higgins and Wood at the hearing, the court concludes that Higgins's theory is not supported by the facts and is otherwise not credible.

## 2. The Clock

An electric clock mounted on the wall of the store's first floor stopped at 10:44. At trial, the state theorized that the clock stopped when the heat from the fire below caused the electrical wiring to fail and the circuit breaker to trip. The state further theorized that because the fire was hot enough to cause an electrical failure by 10:44, it necessarily would have started when Dugas left the store just after 10 p.m.

Here, Higgins disputed the state's theory about the clock on the ground that no one tested the clock to see if it was otherwise in working condition on the night of the fire. He suggested that the clock may have stopped working sometime before the fire and that the time indicated by the clock has nothing to do with the fire. In his first affidavit, Higgins complained that although the clock was still in the store and in good condition when he visited the scene in August of 2000, he "was not allowed to take it away to see if it worked properly or not." Higgins 1st Aff. ¶ 13. He faulted the state for failing to preserve the clock as evidence and for failing to have the state's electrical expert, Nathaniel Johnson, test the clock to see if it worked. At the hearing, however, Higgins changed his

mind and testified that he did not test the clock because "I didn't think it was significant enough for me to test it; that's all." Hearing Tr. at 47.

In investigating the wiring in the store, Johnson found the wiring that powered the clock. He determined that when the clock was unplugged, the resistance reading for that circuit changed, which told him that the motor in the clock still worked. That reading also confirmed that he had located the wiring circuit which powered the clock. The clock's wiring failed in an area within the plume of the fire in the basement, and Johnson gave his opinion that the fire caused the wiring to short, which tripped the circuit breaker at the time indicated on the clock.

The clock in question was hanging on the wall in plain view in the store, where, presumably, Dugas or other store employees would have noticed if it had stopped working and would have repaired or replaced it. It would also be a highly unlikely coincidence that the clock would have happened to stop at 10:44, a time that is pertinent to the fire investigation. Dugas and Higgins offer no evidence to support Higgins's theory that the clock might have stopped before the fire, leaving only Higgins's raw speculation on that point. Therefore, the evidence supports the warden's theory, based on Johnson's opinion, that the time on the clock shows when the fire was hot enough to reach the wires and cause a short, leading to the inevitable conclusion that the fire started sometime before 10:44 on that evening.

B. Electrical or Other Cause

With respect to an alternative cause of the fire, Higgins contended that the possibility of an electrical fire was not properly investigated. The First Circuit noted that Higgins's "speculation about the existence of missing contradictory evidence alone is not a ground for finding prejudice" but that "a critique that undermines the methodology of the state's experts would be relevant in a prejudice determination in this case." Dugas, 428 F.3d at 335 n.26.

In his letter sent in October of 2000, Higgins criticized the state for allowing the electrical equipment and wiring to be removed from the store without drawings and photographs to document their positions prior to removal. That charge is contrary to the evidence. In fact, at the hearing held on June 1, Higgins referred to the diagram of the wiring prepared by the state's electrical engineer, Nathaniel Johnson.

James Eddy, the fire investigator hired by Zurich Insurance, toured the fire scene, collected samples, and inspected the electrical system for signs of an electrical fire after the Nashua fire investigators completed their investigation and had removed their samples. Eddy concluded that the source of the fire was in papers located in the corner of the basement and was not electrical. Nevertheless, he contacted Nathaniel Johnson to further investigate the electrical system on behalf of the insurance company as to whether that system caused the fire.

Johnson explained at Dugas's trial that the insurance company instructed him to remove and document every wire even remotely connected with the fire with complete "arc mapping." Trial Tr., Day 3, at 47. "And on the 7th of December I hired two technicians and we came down and spent close to fifteen hours, three people, documenting not only in notes but documenting photographically, marking and removing electrical wiring from the basement." Id. at 48. Johnson testified that he visited the scene three times and spent a total of thirty hours on his examination and evaluation. He found damaged wires and evidence of touching wires that would have tripped the circuit breaker. Johnson concluded that the wires were damaged and failed because of the fire and that there was no evidence "that exhibited any sign of electrical activity that could be significant enough to ignite ordinary combustibles." Trial Tr. Day 3 at 44.

Higgins stated in his first affidavit that he examined the electrical system in the storage area where it was kept after being removed from the store. He noted the short in the wiring and stated "[i]t is possible for a wire to have a high resistance short circuit which will generate enough heat to ignite the insulation on the wire which will in turn ignite nearby flammable materials without drawing enough current to trip the circuit breaker." Higgins 1st Aff. ¶ 15. At the hearing, Higgins testified: "I don't know for sure what the exact cause of it [sic], but I said I have many questions as to the cause of the

fire." Hearing Tr. at 16. Higgins then testified that a shorted wire could have caused the fire by igniting the ceiling beam, which would have caused burning embers to drop on the papers below and ignite a secondary fire there. Higgins conceded, however, that the circuit breakers were operating properly and would have tripped if a short circuit occurred.

At Dugas's trial, James Eddy testified that although a drop fire is a possibility to consider in investigating a fire, the original electrical fire would have caused much more extensive damage to the floor joists, the ceiling, and the floor above, if that had been the source of the fire. Wood agreed with Eddy and disagreed with Higgins. He testified at the hearing that to cause a secondary fire in the papers on the floor below, the shorted wires would have had to start a fire that burned long enough to generate char which would release embers with sufficient heat that they could fall fourteen feet from the ceiling to the floor and still be hot enough to set the paper ablaze. Wood asserts that a fire of that magnitude would have caused much more localized damage to the ceiling area than the damage that actually occurred. He also noted the difficulty of setting solid wood on fire with a short-lived electrical event such as an arc caused by a shorted wire, which will quickly trip the circuit breaker.

Higgins's theory about the possibility of an electrical cause for the fire is not supported by objective evidence and is



merely speculative. In addition, his theory is refuted by Johnson's testimony at the trial and by Wood's testimony at the hearing. Taken in the context of the opposing testimony, Higgins's opinion lacks credibility and carries little weight, particularly as speculation is not a sufficient ground to find prejudice for purposes of the ineffective assistance of counsel analysis. Dugas, 428 F.3d at 335 n.26.

Higgins also criticized the state for not providing evidence at trial that twenty percent of all fires are of undetermined cause. Eddy testified at the trial, however, that about ten percent of investigated fires are of an undetermined origin. Wood agreed with Eddy's testimony. The possibility of an undetermined cause was before the jury, and the difference in percentages is not material.

### III. Chemical Analysis of Fire Debris Samples

Higgins criticized the process used to collect and analyze the fire debris samples. Based on that criticism, the First Circuit was concerned about "flaws in the state forensic chemist's analysis." Dugas, 428 F.3d at 334. This court was directed to determine whether Higgins's analysis of the chemical evidence suggested an innocuous explanation for the substances detected in the debris. Id. at 342.

A. ASTM E-1387-95 Standards

In his letter dated October 20, 2000, Higgins stated that the state lab failed to follow the ASTM E-1387-95 standards in analyzing fire scene samples for the presence of possible accelerants. He criticized Morris Boudreau's report that stated medium petroleum distillates were detected but failed to identify the particular product. In his first affidavit, Higgins stated that ASTM E-1387-95, section 8.1.2.2

requires an analyst to create a charcoal strip and a carbon disulfide residue from the sample and create a chromatogram of the hydrocarbons, if any, found in the sample. If the chromatogram shows there are hydrocarbons in the sample, the analyst then has to cross-match the sample's chromatogram pattern with standardized chromatograms of known petroleum products until an exact match of the hydrocarbons is found.

Higgins 1st Aff. ¶ 18. He also asserted that section 8.1.2.2 "requires an investigator to maintain all of the samples' charcoal strips and carbon disulfide residue to be properly preserved in the case file." Id. ¶ 22. In his second affidavit, he explained that the general procedure required by ASTM E-1387-95 is that a fire residue sample must be identified as to product type, such as charcoal lighter fluid, before it can be classified. Higgins 2d Aff. at ¶¶ 21 & 23. At the hearing, Higgins was asked to explain the difference between "identified" and "classified" as used in the ASTM E, and he responded with a long explanation of the full procedure intended by those standards. Hearing Tr. at 145-147. He did not cite any

particular section of ASTM E-1387-95 to support his interpretation.

Higgins faulted Boudreau for failing to follow ASTM E standards and testified that Boudreau once told him, personally, that he did use the ASTM E standards. Bouchard testified that the state follows its own protocols in testing fire debris and uses the ASTM E standards merely as a reference in designing its own protocols. She also disputed Higgins's opinion that an analyst is required to find an exact match between a known standard sample chromatogram and a fire debris chromatogram, explaining that an exact match is not possible because of the differences in samples and extraction methods. She further explained that the process requires identification of a particular classification, not a particular product.

ASTM E-1387-95 is titled "Standard Test Method for Ignitable Liquid Residues in Extracts from Fire Debris Samples by Gas Chromatography." In part 1, its scope is described as "the identification of residues of ignitable liquids in extracts from fire debris samples." § 1.1. In part 9, the standard explains that the "Petroleum Distillate Classification System" provides for identification of six major classes of complex liquid products from chromatogram patterning. Part 10 provides the procedure for making a classification and lists the six major classes as light petroleum distillates, gasoline, medium

petroleum distillates, kerosene, heavy petroleum distillates, and miscellaneous. A classification is made by matching the sample chromatogram "with a known standard chromatogram obtained under similar conditions, noting sufficient significant points of correlation or similarities." § 10.2.1.

The disputed part of ASTM E 1387-95 is section 8.1.2.2, which is included in part 8, that is titled "Calibration." Part 8 begins by directing that chromatographic instruments must be calibrated frequently and provides the procedures for doing so. Section 8.1.2.1, which immediately precedes section 8.1.2.2, states that "[s]tandard chromatograms must be run under the same chromatographic conditions as those used to produce the sample chromatogram." Section 8.1.2.2, the disputed section, provides: "Every case file that includes a positive identification of an ignitable liquid or residue must include the standard chromatogram used to confirm the identification." That section does not require identification of a particular product before classification and does not even mention charcoal strips and carbon disulfide residue. The plain language of section 8.1.2.2 does not support Higgins's interpretation.

ASTM E-1387-95 does not define the terms "identification" and "classification" or otherwise distinguish between them. It appears to use the terms somewhat interchangeably. As Bouchard ably explained at the hearing, Boudreau properly classified the

substances he detected in the fire debris as medium petroleum distillates and normal alkanes. Higgins's interpretation of the ASTM E standards and his criticisms of Boudreau's methods would have provided little help to the defense when those standards are not required at the State Laboratory and his opinions appear to be contrary to the plain meaning of the standards.

B. Higgins's Test Results

Even if Higgins's opinions about the ASTM E standards and his criticisms of Boudreau's methods were credited, his own analysis of the chromatograms made from the fire debris undermines his criticisms.<sup>8</sup> Although Higgins initially challenged the validity of the chromatograms and accused Boudreau of improper calibration of his equipment, Higgins retracted those criticisms at the hearing when he testified that the chromatograms were accurate. Hearing Tr. at 23-24. Higgins found that the two samples that Boudreau identified as containing medium petroleum distillates were actually positive for mineral

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<sup>8</sup>Higgins found that the debris samples themselves were useless for testing due to the passage of time and that the charcoal strips and carbon disulfide residue vials made from the samples had been lost. Higgins faults the state lab for failing to preserve the charcoal strips and vials, but Bouchard testified at the hearing that the state lab always returns the samples with the strips and vials to the entity that submitted them for testing, which in this case was the Nashua Fire Department.

spirits or charcoal lighter fluid.<sup>9</sup> In light of that finding, Higgins and Dugas no longer contend that the medium petroleum distillate found in the fire debris might have been improperly classified.<sup>10</sup>

Higgins offered a new theory in his affidavit that "it is entirely possible that the two samples containing hydrocarbons were tainted by their collection process and gave false readings." Higgins 1st Aff. ¶ 23. At the hearing, Higgins stated that the light components in the chromatograms of the petroleum product from the debris samples were more intense than the light components of the sample charcoal lighter fluid. He explained that because the lighter components would burn first, a chromatogram showing more light components in the debris than on the standard sample chromatogram was inconsistent with the conclusion that an accelerant was used to start the fire. Instead, Higgins postulated, "when they took these standards, the

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<sup>9</sup>Higgins previously criticized Boudreau for equating mineral spirits and charcoal lighter fluid, but in his testimony, he appeared to do the same thing.

<sup>10</sup>Higgins previously had asserted that the medium petroleum distillate could have been due to contamination of the debris by bug spray with a kerosene component. Joseph Daddario, a pest control technician, testified at Dugas's trial that he had provided monthly service at the Dugas Superette, inspecting and treating for insects and that when he sprayed he used water-based products. He also testified that his inspections and traps showed no insect activity in the basement and that he never applied insecticide at all in the basement. Trial Tr. Day 5 at 117-30.

samples themselves, they possibly nearby or at some point either at the fire scene or in the laboratory, somehow there got to be some fresh mineral spirits - or charcoal lighter fluid I should say on two of those samples." Hearing Tr. at 26. In other words, Higgins contends that the fire debris samples that tested positive for charcoal lighter fluid were contaminated either in the collection process at the scene or in the laboratory.

In his affidavit, Higgins was highly critical of the state fire investigators' collection methods.<sup>11</sup> When asked at the hearing if the investigators used the traditional method for collecting samples, he answered, "Well, I saw a picture of one sample being collected. That was it, but I would hope they did." Hearing Tr. at 32. He also acknowledged that the investigators testified at trial that they used rubber gloves and that they had isolated all of the samples in the proper manner. Boudreau testified at the trial about the procedures he used in the lab, and Bouchard testified at the hearing about the procedures generally used in the lab when samples are received, refuting Higgins's suggestion that the debris samples might have been contaminated by the lab.

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<sup>11</sup>Higgins previously stated: "Mr. Wood's assertion that the State's video of Mr. Strand picking up debris is sufficient to comply with fire debris analysis requirements is simply wrong. The area where the debris is collected must be clearly marked, the sample identified and the canister marked. None of that occurred with the State's samples." Higgins 2d Aff. ¶ 15.

Bouchard also pointed out that Higgins's contamination theory did not make sense. She stated that the tested sample of charcoal lighter from the scene could not have been the source of contamination, as Higgins suggests, if its chromatogram did not match the charcoal lighter found on the debris samples. Instead, Bouchard surmised that the lighter components in the debris chromatogram were the result of background materials in the fire debris. Bouchard explained that the testing process for the charcoal lighter fluid sample was different from the process used for the fire debris. The lighter fluid sample was tested directly and was exactly representative of the liquid tested while fire debris samples required extraction "so that the chromatogram that you are going to get as a result of doing this kind of an extraction is not going to be a true representation of that liquid if you ran that liquid straight." Hearing Tr. at 65. Bouchard testified that she knew from Morris Boudreau's case notes that he did "an activated charcoal strip extraction on the debris samples from the scene, and [the standard sample] was a napkin that had some liquid absorbed onto it and he did a carbon disulphide extraction of that." Id. at 66.

Whether or not the ASTM E standards required identification, as Higgins asserts, or were satisfied by Boudreau's analysis, as Bouchard asserts, Higgins's own analysis of the chromatograms, which he acknowledges are accurate, identified charcoal lighter



fluid as the medium petroleum distillate found on the two positive fire debris samples. Charcoal lighter fluid is undeniably an ignitable liquid that can be used as a fire accelerant, consistent with Boudreau's testimony at Dugas's trial. Those samples were collected at the fire scene when a trained dog alerted to show that the debris might contain accelerants. Higgins offers only speculation about the possibility of contamination after the samples were collected to undermine the import of his own finding that the fire debris samples showed charcoal lighter fluid.

The state fire investigators, Strand and Donaldson, and the insurance investigator, Eddy, all concluded that the fire was intentionally set. Higgins's analysis of the chromatograms, showing the presence of charcoal lighter fluid, is consistent with their opinions. Higgins's speculation about contamination is unpersuasive and insufficient to support a prejudice determination.

#### IV. Manipulation of the Fire Scene

Based on the videotape of Dugas's actions on the night of the fire, the state contended that he left the store at about 10:10 p.m. with another employee and then stopped to put a bag of trash in the dumpster while the employee drove away. Dugas, 147 N.H. at 66. After throwing the trash in the dumpster, Dugas re-

entered the store and walked into an office where he turned on the light for a short time. Id. He "then walked toward the basement door before leaving the camera's field of view, [and] [w]hen [Dugas] returned to the camera's view, he was moving quickly toward the back of the store just before the videotape ended." Id. According to the videotape, the time Dugas was not in the camera's view, when the state asserted that he went into the basement to light the fire, was sixty-two seconds. See Trial Tr. Day 3 at 168. After repeatedly denying that he reentered the store, Dugas admitted at trial that he had done so. Id.

The state theorized that Dugas's route to the basement door went through an area between a sandwich display case and a fish cooler where boxes of cooking oil were stored on the floor.<sup>12</sup> Higgins states that smoke shadows on the floor, on the cooler and display case, and on boxes located in the area show that "the state's theory of how Peter Dugas committed arson could not possibly be correct. It was physically impossible for Dugas to have taken the path within the store the state claimed he took the night of the fire." Higgins 1st Aff. ¶ 8 (evidence citation omitted). Higgins contends that the boxes were stacked to a height of forty-five inches and left only four and a half inches between the boxes and the display case. He faults the state for

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<sup>12</sup>Dugas testified at trial that he went over to the sandwich case to turn off the light and that he was walking fast because he had already set the alarm and did not have much time.

not recreating the exact location of the boxes before the jury's view of the scene. Higgins believes that the state mislead the jury by showing a more accessible passageway than actually existed on the night of the fire. Dugas now contends: "It is inconceivable that the State's theory could withstand a cross-examination of the State's experts that included a close look at the fire shadows on the floor, the cooler, and the display case." Petition at 11.

Richard Wood reviewed the trial transcripts and the documents, videos, and photos submitted by Dugas in support of his motion for a writ of habeas corpus. He pointed out that Higgins was not present for the jury's view and, therefore, does not know what the position of the boxes might have been at that time or what the jury might have seen. He found a video of the fire scene that was made prior to trial which provided a clear view of the refrigeration unit where Higgins thought there were smoke stains on the wall from boxes stacked three high.<sup>13</sup> Wood stated in his affidavit that the video did not show the smoke shadows Higgins had reported. Wood gave his opinion that the number of boxes in that area of the store, the soot residue on the boxes, and the number of box prints shows that the boxes were not stacked as high as Higgins postulates. In addition, although

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<sup>13</sup>At the hearing, Higgins acknowledged that the smoke stains did not show up in the photographs but he insisted that the stains were there.

the space between the boxes and the base of the cooler was only four and a half inches, the fish cooler tapered from its base upward so that while the space between the cooler and a box would have been only four and a half inches at the bottom, it was wider at the top.

Contrary to Higgins's opinion and Dugas's current argument, the issue of whether Dugas could have gotten through the area between the sandwich case and the fish cooler was addressed at trial. When he was asked whether he could squeeze between the cooler and the case with the boxes in the way, Dugas did not say that it was physically impossible. Instead, he twice answered, "Not very well," and then said, "Not very easily. It's a tight space and I'm not a small guy." Trial Tr., Requested Portions, at 95-96.

The state did not suggest that the space between the cooler and the case was unobstructed. The prosecutor asked Dugas if there were things in the way, and he answered, "Yeah, there's a whole bunch of oil boxes there and the things I described earlier." Id. at 95. The state also did not ignore the smoke shadows caused by the boxes, as Dugas now charges. The prosecutor asked Dugas about the smoke shadows and clean spots near the sandwich cooler as follows: "But we looked on the floor when we went for the view with the jury and there was back from it some clean, white spots on the floor where something must have

covered that spot during the fire and all the soot damage, did you see that?" Id. at 95. Dugas answered that he did not see that.

If Higgins's opinion about the stacked boxes had been available to present at trial, it might have bolstered Dugas's testimony that he could not have easily squeezed through that space, assuming Dugas would agree that the boxes were stacked as Higgins suggests. Higgins's opinion, even if it were accepted as true, however, does not prove that the state's theory was impossible. At best, it is cumulative of Dugas's own testimony that he could not have fit through that area easily or very well. As such, Higgins's opinion does little, if anything, to undermine confidence in the jury's verdict.

#### IV. Summary

The appellate court "perceive[d] a distinct possibility that, if [Dugas's trial counsel] had consulted an arson expert, the outcome of the trial would have been different." Dugas, 428 F.3d at 341. The court's perception was based, in part, on its dim view of the state's case against Dugas, concluding that the "case lay on a knife edge, and it would not have taken much to sway at least some jurors towards acquittal." Id. at 336. After reviewing much of the testimony in the trial transcripts and with the benefit of an evidentiary hearing, this court does not share

the appellate court's negative evaluation of the state's case.

As is noted above, new information that is presented in a habeas proceeding through affidavits raises an issue of the witnesses' credibility that requires the court to make credibility determinations based on testimony presented at a hearing. See Owens, 394 F.3d at 498; see also United States v. Giacometti, 153 F.3d 257, 258 (5th Cir. 1998) (discussing court's credibility determination of witnesses at habeas hearing); Amrine v. Bowersox, 128 F.3d 1222, 1228 (8th Cir. 1997) (discussing need for credibility assessment in context of new evidence necessary for actual innocence claim). Here, the court has heard the new witnesses testify and has had the opportunity to assess their credibility in light of all of the evidence presented in support of and in opposition to the habeas petition. The court finds that Higgins's opinions are speculative, inconsistent, contrary to the factual evidence, and significantly less credible and less persuasive than the opinions given by Boudreau, Johnson, and the fire investigators at the trial and by Wood and Bouchard at the evidentiary hearing. As such, Higgins's opinions would not have been helpful to the defense. Higgins's opinions and Dugas's theories as to the prejudice resulting from his counsel's failure to consult with an arson expert do not undermine the court's confidence in the guilty verdict.

Conclusion

For the foregoing reasons, the petitioner's motion for a writ of habeas corpus (document no. 29) is denied.

The clerk of court shall enter judgment accordingly and close the case.

SO ORDERED.

  
Joseph A. DiClerico, Jr.  
United States District Judge

August 24, 2006

cc: Stephen D. Fuller, Esquire  
Daniel A. Laufer, Esquire